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PATERNAL INFLUENCE ON CAREER CHOICE.

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FATHER'S OCCUPATION WAS COMPARED WITH SON'S CAREER CHOICE FOR A SAMPLE OF 76,015 MALE, COLLEGE FRESHMEN. RESULTS INDICATED THAT CERTAIN TYPES OF FATHERS' OCCUPATIONS WERE ASSOCIATED WITH SIMILAR TYPES OF CAREER CHOICES BY SONS. BOYS WHOSE FATHERS WERE IN SCIENTIFIC OCCUPATIONS (ENGINEERS, MILITARY OFFICERS, ARCHITECTS, BIOLOGISTS, CHEMISTS, AND PHYSICISTS) WERE LIKELY TO CHOOSE CAREERS IN THE SCIENTIFIC AREA--ENGINEER, CHEMIST, PHYSICIST, ARCHITECT, MATHEMATICIAN, AND BIOLOGIST. SONS OF FATHERS IN MEDICAL FIELDS (PHARMACISTS, OSTEOPATHS, CHIROPRACTORS, OPTOMETRISTS, DENTISTS, AND PHYSICIANS) TENDED TO CHOOSE MEDICAL CAREERS--VETERINARIAN, PHARMACIST, DENTIST, AND PHYSICIAN, AND BOYS WHOSE FATHERS WERE IN OCCUPATIONS INVOLVING TEACHING OR GUIDANCE (TEACHER, SCHOOL AND COLLEGE ADMINISTRATORS, CLERGYMEN, AND SOCIAL WORKERS) GRAVITATED TOWARDS SIMILAR CAREERS, SUCH AS TEACHER, CLERGYMAN, COLLEGE PROFESSOR, SOCIAL WORKER, AND MISSIONARY. THIS DOCUMENT IS NATIONAL MERIT SCHOLARSHIP CORPORATION RESEARCH REPORT, VOLUME 3, NUMBER 2, 1967. (AUTHOR)

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Paternal Influence on Career Choice

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Abstract

Father's occupation was compared with son's career choice for a sample of 76,015 male, college freshmen. Results indicated that certain types of fathers' occupations were associated with similar types of career choices by sons. Boys whose fathers were in scientific occupations (engineers, military officers, architects, biologists, chemists, and physicists) were likely to choose careers in the scientific area--engineer, chemist, physicist, architect, mathematician, and biologist. Sons of fathers in medical fields (pharmacists, osteopaths, chiropractors, optometrists, dentists, and physicians) tended to choose medical careers--veterinarian, pharmacist, dentist, and physician. And boys whose fathers were in occupations involving teaching or guidance (teachers, school and college administrators, clergymen, and social workers) gravitated towards similar careers, such as teacher, clergyman, college professor, social worker, and missionary.

Paternal Influence on Career Choice

Charles E. Werts[+]

Studies of college students (Davis, 1965; Nelson, 1939; Werts, 1966c) have shown that a father's occupation is useful in predicting his son's field of study in two different ways: (a) because choice of field is associated with social class (SES) background, father's occupation can be used as an SES indicator, and (b) if the father's occupation demands a college education, his college-going son will be more likely than other students of equivalent SES background to choose his father's occupational field. According to Caplow (1954), these findings suggest two independent causal relationships: (a) the range of career choices open to a son will be limited by the general circumstances of his upbringing, and (b) the father will directly influence his son to follow in his own footsteps. The first mechanism, as applied to college students, presumably causes certain fields, like education, to be favored by low-SES students, and others, like medicine and law, to be favored by high-SES students. Some of the life circumstances that specifically draw low-SES students into teaching may be convenient, inexpensive, and unselective teachers colleges; lack of motivation for extended, professional schooling; and a less competitive curriculum. The direct influence of fathers on their sons' career choices will be re-examined here, using new data which indicate that sons are more likely to choose careers similar to their fathers'.

[+]The author is indebted to Bruce K. Eckland, John K. Folger, and Robert C. Nichols for reviewing the manuscript.

The career choices of college freshmen were studied in relation to their fathers' occupations. Although in a majority of cases the students' freshman career choices will not be their final career fields, freshman data can be related meaningfully to post-university career choice in the manner suggested by Davis (1965) and replicated by Werts (1967, in press): except for the social sciences, career choice changes during college will accentuate trends noted at the beginning of the freshman year. For example, if a particular field, like teaching or engineering (for males), initially attracts low-SES students, low-SES students will switch into and high-SES students will switch out of that field during college. This process sorts people into fields compatible with their academic ability, class background, values, etc. The sorting process reduces the initial oversupply of those choosing prestigious careers (e. g., physician and lawyer) and diverts them to less prestigious ones (e. g., teacher), which are chosen by too few freshmen relative to the number of students ending up in these careers. In effect, more students will have lowered than will have raised their occupational aspirations--as measured by a prestige scale--during the college years.

Method

The subjects were 76,015 males entering 248 four-year colleges and universities in the fall of 1961. The sample, with few exceptions, included all male freshmen at each institution. The colleges were heterogeneous in size, type (coeducational, public, private, nondenominational, denominational, etc.), quality (Ph.D. productivity, "prestige"),

geographic region, and SES level of entering students. Astin (1965) gave further details about this sample of colleges. Because of the absence of two-year and some overrepresentation of "elite" institutions, the results probably are conservative. The disadvantages of studying college freshmen are: (a) it cannot be ascertained if low-SES sons choose occupations like their fathers', since college students rarely plan careers in low-SES occupations, and (b) the effects of social-class background (as indicated by level of father's occupation) on career choice apply only to sons who actually enter college, thereby restricting the range of career choices studied to the semiprofessional and professional levels. One considerable advantage of this sample is that career choice differences as related to father's occupation cannot be attributed to ability differences. Werts (1966a) has shown that SES background is only slightly related to academic ability among college students. Thus, controls for ability had little effect on the SES-related differences in career choice examined in this study.

Along with the usual registration forms, each freshman filled out a short information form which included the following questions:

1. Probable future occupation: _____
2. Circle one: Male Female
3. Father's occupation: _____

Probable future and father's occupation were coded into the categories shown in Table 4. The percentage of sons in each career-choice category was computed for each father's occupation. Complete listings of these percentages are provided in Table 4, in order that interested investigators

may combine career choice and father's occupation into types other than those studied here.

Results

Teaching

Table 1 shows for each father's occupation the percentage of sons, ordered from high to low, who indicated a career choice of "teacher" (primary and secondary level only). A larger percentage of low- than of high-SES students chose teaching: the range was from 21.1% for laborers' sons to 2.8% for architects' sons. With some notable exceptions, the percentage of sons choosing "teacher" ordered fathers' occupations along a social-class scale: low-SES, semiprofessional, and professional. Exceptions to the ordering were enlightening: sons of teachers, school administrators (mainly principals), college administrators, clergymen, and social workers chose teaching at a rate similar to that of low-SES students rather than at a rate appropriate to their class level. In our society these occupations are assigned the role of guiding people's lives--of molding and teaching. The percentage of psychologists' and college professors' sons who chose teaching also tended to be high relative to that of sons of fathers with equivalent education, such as lawyers, physicians, and physicists.

Engineering

Table 2 shows fathers' occupations ordered within each SES group by the percentage of sons who indicated a career choice of "engineer." A modest class trend appeared in that 16.5% of Group I (low-SES) sons chose "engineer," in contrast to 12.3% of Group III (professional) sons.

Table 1

Percentage of Sons With the Career Choice of "Teacher"

For Various Fathers' Occupations

	Percentage of Sons Choosing "Teacher"		Father's Occupation	
Group I	21.14	Low-SES	Laborer	
	18.34			Exceptions: Teacher
	16.67		Semiskilled worker	
	16.22			Exceptions: School administrator
	15.53		Service worker	
	15.29		Farmer	
	14.94		Skilled worker	
	14.38			Exceptions: College administrator
	14.16			Exceptions: Clergyman
	13.82		Clerical worker	
	13.17		Foreman	
	10.87			Exceptions: Social worker
Group II	9.41	Semiprofessional	Artist, interior decorator	
	9.01		Technical worker	
	8.25		Businessman	
	7.99		Salesman	
	7.77		Actor, musician, entertainer	
	7.26		Elected official	
	7.22		Accountant	
	6.82			Exceptions: Psychologist
	6.70			Exceptions: College professor
	6.31		Writer	
Group III	5.76	Professional	Military officer	
	5.04		Engineer	
	5.00		Scientist, nec[a]	
	4.76		Biologist	
	4.67		Paramedical professions[b]	
	3.96		Dentist	
	3.76		Physician	
	3.72		Chemist	
	3.63		Lawyer	
	2.82		Physicist	
	2.79		Architect	

Note.--The sample consisted of 76,015 male college freshmen. Fathers' occupations were ranked by the percentage of sons choosing "teacher." This procedure showed that the higher the class background, the lower the percentage of sons choosing "teacher," with the exception of fathers' occupations noted. These exceptions suggest that when fathers are in teaching-guidance occupations, their sons are more likely than other sons of similar class background to choose "teacher."

[a] nec = not elsewhere classified.

[b] paramedical professions = pharmacist, optometrist, osteopath, chiropractor.

Table 2

Percentage of Sons With the Career Choice of "Engineer"

For Various Fathers' Occupations

	Percentage of Sons Choosing "Engineer"	Father's Occupation
Group I Low-SES	19.21	Foreman
	19.09	Skilled worker
	18.19	Service worker
	17.69	Semiskilled worker
	16.63	Clerical worker
	14.59	Farmer
	13.88	Laborer
	16.51	Group I Average
Group II Semiprofessional	18.58	Technical worker
	15.64	Elected official
	14.77	Businessman
	14.71	Artist, interior decorator
	14.09	Accountant
	11.64	Salesman
	9.71	Actor, musician, entertainer
	9.61	Writer
	14.07	Group II Average
Group III Professional	24.82	ENGINEER
	19.06	MILITARY OFFICER
	16.92	SCIENTIST, nec[a]
	15.09	ARCHITECT
	14.29	BIOLOGIST
	12.68	PHYSICIST
	12.31	Teacher
	12.03	Chemist
	11.36	Psychologist
	10.40	School administrator
	9.34	Paramedical professions[b]
	7.58	Clergyman
	7.44	College professor
	7.19	College administrator
	6.52	Social worker
	6.00	Lawyer
	4.95	Dentist
	4.90	Physician
	12.33	Group III Average

Note.--Fathers' occupations were ranked by the percentage of sons choosing "engineer." This procedure showed that the higher the class background, the lower the percentage of sons choosing "engineer." The percentage of sons making this career choice for fathers in scientific-technological professions (noted in caps) was high.

[a]nec = not elsewhere classified.

[b]paramedical professions = pharmacist, optometrist, osteopath, chiropractor.

Within the professional group, an expected high percentage (24.8%) of engineers' sons chose engineering, followed by sons of military officers (many of whom may have technical degrees and interests), scientists, architects, biologists, and physicists.

Medicine

Table 3 shows the percentage of sons who indicated a career choice of "physician" for various fathers' occupations, grouped as in Table 2. The percentage of sons choosing medicine increased with increasing SES level from Group I (4.4%) to Group II (8.8%) to Group III (15.4%). At the low end of Group III, sons of physicists and psychologists chose "physician" at a rate similar to that of low-SES sons (Group I), in contrast to the exceptionally high choice rates for sons of physicians (41.1%), dentists (24.3%), and paramedical professionals (19.0%). The high rate of choice of medicine among Group III sons could be attributed mostly to paramedical professionals', dentists', and physicians' sons, who were the only ones exceeding the average Group III rate of 15.38%.

Other Career Choices

The remaining career choices were studied differently, because the sample sizes were insufficient for separate analysis by father's occupation. For each combination of father's occupation and son's career choice, an expected cell frequency was computed by multiplying the total number of sons in that particular father's occupation category by the total number of students with that particular career choice, and dividing the product by the total sample size. This expected cell frequency is the frequency that would be expected if no relationship

Table 3

Percentage of Sons With the Career Choice of "Physician"

For Various Fathers' Occupations

	Percentage of Sons Choosing "Physician"	Father's Occupation
	6.21	Clerical worker
	5.74	Service worker
	5.04	Foreman
Group I	4.93	Semiskilled worker
Low-SES	4.72	Skilled worker
	4.39	Laborer
	2.39	Farmer
	4.38	Group I Average
	9.38	Businessman
	9.36	Accountant
	7.76	Salesman
Group II	6.84	Technical worker
Semiprofessional	6.70	Elected official
	6.61	Writer
	6.18	Artist, interior decorator
	5.83	Actor, musician, entertainer
	8.82	Group II Average
	41.05	PHYSICIAN
	24.26	DENTIST
	19.03	PARAMEDICAL PROFESSIONS[a]
	12.42	College administrator
	12.06	School administrator
	11.75	Chemist
	11.65	Lawyer
	10.87	Social worker
Group III	9.52	Biologist
Professional	9.23	Scientist, nec[b]
	8.46	Engineer
	8.45	Clergyman
	8.30	Teacher
	8.04	College professor
	7.26	Architect
	6.83	Military officer
	4.55	Psychologist
	4.23	Physicist
	15.38	Group III Average

Note.--Fathers' occupations were ranked by the percentage of sons choosing "physicia This procedure showed that the higher the class background, the higher the percentage of sons choosing "physician." The percentage of sons making this career choice for fathers in medical type professions (noted in caps) was exceptionally high.

[a]paramedical professions = pharmacist, optometrist, osteopath, chiropractor.

[b]nec = not elsewhere classified.

existed between father's occupation and student choice. Each cell of Table 4 then was tested to determine if the actual frequency in that cell was significantly higher (at the .05 level) than the expected cell frequency. The chi square statistic was used where the expected frequency was equal to or greater than 5, and Poisson distribution analysis where this value was less than 5. This technique was not as powerful as that employed for "teacher," "engineer," and "physician," because each cell frequency was compared against an expected value derived from the whole sample rather than against an expected frequency for persons of similar class background. The requirement that the observed cell frequency be significantly higher than the expected served, however, to minimize errors from this source. In the following discussion of results, the term, "overchose," will refer to those cases in which the number of sons with a particular career choice was significantly higher than the expected frequency.

All statistically significant cases of overchoice are noted in Table 4. In this table sons' career choices are listed in order of average father's education. Similarly, fathers' occupations are listed in order of mean father's education. Attention in the present study is focused on the career choice patterns of professionals' sons, keeping in mind that some of the significant cases of overchoice are reflections of class trends discussed previously (Werts, 1966c) rather than evidence of a unique pattern. Discounting class trends, the following results are of interest:

1. For fathers' occupations associated with the career choice of "teacher" (teacher, public school or college administrator, clergyman,

Table 4

Percentage of Sons Choosing Various Careers for Various Fathers' Occupations (N = 76,015)

		Group I Low SES Fathers							Group II Semiprofessional Fathers								
Son's Career Choice	Father's Occupation / Sample Size	Laborer	Semiskilled Worker	Service Worker	Farmer	Skilled Worker	Clerical Worker	Foreman	Artist	Technical Worker	Businessman	Salesman	Actor	Accountant	Elected Official	Writer	Military Officer
		3235	5472	940	5597	2777	2706	1389	340	877	17531	6067	103	1399	179	333	556
Dietician	17	.09•	.02	.00	.07•	.00	.00	.07	.00	.00	.02	.00	.00	.07	.00	.00	.00
Nurse	31	.15•	.04	.00	.05	.14•	.07	.00	.00	.00	.02	.05	.00	.00	.00	.00	.00
Skilled Worker	231	.43	.53*	.32	.66*	.68*	.22	.43	.00	1.03•	.29	.16	.00	.00	.00	.00	.18
Lab. Technician	152	.53*	.35*	.11	.34*	.18	.44*	.29	.29	.11	.13	.10	.00	.07	.00	.00	.00
Teacher	8,174	21.14*	16.67*	15.53*	15.29*	14.94*	13.82*	13.17*	9.41	9.01	8.25	7.99	7.77	7.22	7.26	6.31	5.76
Accountant	2,253	4.33*	3.95*	5.43*	2.89	3.93*	4.10*	3.74	2.35	2.96	3.05	2.87	2.91	9.65*	1.68	.30	1.26
Speech Therapist	70	.25	.13	.11	.09	.18	.15	.22	.29	.11	.07	.02	.00	.07	.56•	.00	.00
Clerical Worker	65	.09	.05	.00	.20•	.14	.18	.07	.00	.11	.08	.13	.00	.14	.00	.00	.00
Farmer	1,813	2.60	2.16	1.49	13.49*	1.98	1.85	1.73	1.18	1.14	1.29	1.01	.00	.93	1.12	.90	1.08
Pharmacist	766	1.36*	1.32*	1.17	.73	1.15	1.37	1.22	.59	1.25	.99	1.05	.00	.21	.00	.60	.18
Social Worker	141	.40*	.22	.11	.11	.32	.41•	.22	.00	.11	.14	.15	.00	.00	.00	.30	.00
Veterinarian	612	.74	.64	.53	2.82*	.36	.59	.50	.00	1.25	.70	.69	.00	.36	.00	.90	.54
Pilot	125	.12	.27*	.11	.14	.32•	.04	.00	.00	1.14•	.14	.23	.00	.21	.56	.00	.36
Missionary	97	.25	.11	.21	.14	.18	.04	.14	.00	.00	.08	.12	.00	.00	.00	.00	.00
Chemist	1,734	3.09*	3.53*	2.45	1.72	2.88*	3.25*	2.59	2.65	3.88*	1.83	2.03	2.91	2.79	1.12	2.70	2.70
Clergyman	866	1.55*	1.37	1.17	1.29	1.26	1.48	1.37	.88	1.82	.88	1.12	1.94	.71	1.68	.30	.72
Engineer	10,562	13.88	17.69*	18.19*	14.59	19.09*	16.63*	19.21*	14.71	18.58*	14.77	11.64	9.71	14.09	15.64	9.61	19.06
Artist	282	.12	.37	.11	.29	.61*	.37	.50	1.76•	.11	.40	.38	.00	.36	.00	.60	.36
Government Service	380	.28	.64	1.17•	.36	.58	.41	.50	.88	.46	.48	.35	.97	.43	1.12	.90	1.08
Interpreter	31	.06	.05	.11	.02	.00	.11	.07	.00	.00	.06	.00	.00	.07	.00	.00	.00
Military Service	624	.71	.80	.32	.43	.72	.70	.94	.29	1.25	.59	.86	.97	.36	.56	.90	13.13
Interior Decorator	70	.12	.04	.21	.13	.07	.11	.14	.59•	.11	.11	.07	.00	.00	.00	.00	.00
Mathematician	777	1.30	1.26	.96	.50	1.01	1.37	.94	1.76	1.94*	.84	1.07	.97	2.14*	.56	.30	1.26
Architect	1,198	1.05	1.43	1.38	.84	2.05*	1.29	1.80	2.35	1.71	1.75	1.99*	2.91	1.86	1.12	1.80	1.26
Businessman	5,066	4.94	4.48	3.83	3.67	4.14	4.73	5.62	5.30	4.79	11.53*	10.11*	5.82	3.28	2.24	4.20	2.46
Musician	174	.28	.24	.11	.14	.14	.37	.29	1.18•	.11	.22	.15	3.88•	.29	1.12•	.30	.18
Geologist	164	.25	.22	.11	.21	.36	.18	.14	.00	.11	.16	.20	.00	.07	.00	.00	.36
Actor, Entertainer	218	.03	.09	.53	.13	.32	.33	.22	.00	.34	.39*	.35	4.85•	.36	.56	.60	.54
Biologist	469	.49	.86*	.53	.45	.58	.89	.72	.88	.80	.59	.51	.97	.79	.00	1.20	.90
Advertising	329	.37	.38	.64	.25	.36	.30	.58	1.18•	.91•	.51	.73*	.00	.29	.56	.90	.18
Physicist	1,269	1.48	1.68	1.06	.93	2.48*	2.29*	1.30	2.35	2.28	1.42	1.57	3.88	1.86	.56	3.00	2.16
Psychologist	398	.56	.46	.32	.18	.50	.52	.94*	1.18	.57	.53	.61	.97	.50	1.12	1.50•	.36
Sociologist	22	.00	.04	.00	.02	.07	.00	.00	.00	.00	.02	.05	.00	.00	.00	.00	.18
Dentist	1,574	1.39	1.63	2.13	.64	1.94	1.37	2.52	2.35	3.31*	2.49*	2.52*	1.94	1.79	2.23	1.50	1.62
Journalist	571	.43	.62	.32	.45	.50	.63	.36	1.76•	.57	.75	.87	2.91•	1.00	.56	10.21•	1.08
Anthropologist	19	.00	.00	.00	.00	.00	.11•	.07	.00	.00	.02	.03	.00	.07	.00	.30•	.00
Lawyer	3,696	2.63	2.43	4.79	2.05	2.52	3.22	3.38	4.12	2.62	5.75*	6.99*	9.71*	6.22*	16.76*	4.80	4.50
College Professor	493	.59	.51	.43	.27	.58	.70	.36	.59	.57	.54	.64	.97	1.29*	.00	.60	.18
Foreign Service	690	.53	.46	1.06	.41	.43	.70	.79	.59	1.37	.99	.94	1.94	.93	3.91•	2.40•	3.06
Physician	5,845	4.39	4.93	5.74	2.39	4.72	6.21	5.04	6.18	6.84	9.38*	7.76	5.83	9.36*	6.70	6.61	6.83
College Scientist	160	.12	.11	.00	.11	.07	.15	.36	.00	.11	.21	.20	.00	.00	.00	.60	.18
nec[a]	4,776	5.41	5.57	5.85	5.84	6.05	7.28	5.62	6.76	6.61	6.63	6.23	4.85	6.43	8.38	6.61	7.91
Undecided	5,594	6.09	5.14	6.38	6.88	5.80	5.95	5.40	8.53	5.70	8.11	8.79	5.83	7.79	8.38	9.31	7.55
No Response	13,417	15.36	16.54	15.00	17.89	15.63	15.04	17.42	17.06	14.25	16.47	16.24	14.56	15.94	13.97	18.92	10.25

Note.--For each father's occupation (shown across width of table) Table 4 gives the percentage of sons with a specific career choice (shown in left-hand column). Fathers' occupations are ordered by mean father's education (as reported by students) from left to right, low to high. Sons' career choices also are ordered by mean father's education (see Werts, 1966a) from top to bottom, low to high. An asterisk (*) denotes a percentage significantly greater (at the .05 level) by chi square analysis than the percentage of the whole sample making this career choice. (For example, 18.34% of teachers' sons choose "teacher," a figure significantly greater than the 10.75% for the whole sample.) Where Poisson distribution analysis was used because of small expected cell frequencies (<5), the asterisk has been replaced by a dot (•).

[a]nec = not elsewhere classified.

Table 4 (continued)

Percentage of Sons Choosing Various Careers for Various Fathers' Occupations (N = 76,015)

Group III
Professional Fathers

Professional nec a	Paramedical Professions	Dentist	School Administrator	Teacher	Social Worker	Engineer	Clergyman	Chemist	Biologist	Architect	Scientist nec a	Physicist	Psychologist	College Professor	College Administrator	Lawyer	Physician	nec a	Deceased	No Response
1039	557	404	481	1145	92	2558	805	349	63	179	260	71	44	672	153	1433	1917	8090	2445	3757
.00	.18•	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
.00	.00	.50•	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.04	.00
.10	.00	.00	.21	.09	.00	.12	.25	.29	.00	.00	.00	.00	.00	.00	.00	.07	.00	.21	.45	.21
.00	.18	.00	.42	.17	.00	.08	.25	.00	.00	.00	.00	.00	.00	.15	.65	.07	.05	.22	.29	.16
6.16	4.67	3.96	16.22*	18.34*	10.87	5.04	14.16*	3.72	4.76	2.79	5.00	2.82	6.82	6.70	14.38	3.63	3.76	12.24	14.81	8.33
1.35	1.08	.99	.42	1.66	1.09	1.09	1.99	1.15	.00	2.23	.38	.00	2.27	.74	.65	1.12	.57	2.74	3.60	2.08
.10	.18	.00	.21	.09	.00	.04	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.12	.13
.00	.00	.00	.00	.17	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.07	.00	.08
1.35	1.44	.00	1.87	1.66	.00	1.41	.62	1.15	3.17	.56	2.31	1.41	2.27	.60	2.61	.49	.63	1.94	1.60	1.55
.48	8.98*	.25	1.46	1.05	1.09	.51	.75	1.15	.00	.56	1.15	1.41	.00	.00	.65	.28	.21	1.01	1.31	.77
.00	.36	.00	.00	.26	3.26•	.08	.50•	.29	.00	.00	.77•	.00	.00	.00	.00	.00	.10	.25	.25	.16
.58	3.59•	.50	.62	.52	1.09	.43	.25	.57	1.59	.00	.00	.00	2.27	.45	.65	.49	.37	.68	.70	.67
.10	.00	.50	.21	.09	.00	.12	.12	.00	.00	.00	.38	.00	.00	.00	.00	.00	.16	.16	.12	.11
.19	.18	.00	.62•	.00	.00	.20	1.24•	.00	.00	.00	.00	.00	.00	.15	.65	.00	.05	.11	.25	.13
1.83	1.80	1.24	2.08	2.71	2.17	2.42	1.99	7.16*	4.76	1.68	3.46	2.82	4.55	3.42*	1.31	1.54	.99	2.35	2.49	1.28
1.15	.36	.99	1.25	.96	2.17	.47	7.95*	.86	.00	1.68	.77	1.41	.00	1.04	1.96	.28	.68	1.05	1.47	.88
9.82	9.34	4.95	10.40	12.31	6.52	24.82*	7.58	12.03	14.29	15.09	16.92	12.68	11.36	7.44	7.19	6.00	4.90	15.75	13.25	7.08
.19	.36	.00	.21	.09	.00	.47	.37	.57	.00	1.12	.00	.00	.00	.60	.00	.21	.21	.48	.41	.35
1.06*	.00	.00	.21	.61	.00	.39	.50	.00	.00	.00	.00	.00	.00	.89	.65	.84	.47	.59	.61	.43
.10	.00	.00	.21	.00	.00	.04	.12	.00	.00	.00	.00	.00	.00	.15	.00	.07	.05	.01	.00	.00
.58	.36	.25	.62	.26	.00	.63	.62	.00	.00	.56	1.54	.00	2.27	.45	.00	.28	.26	1.57	1.19	.48
.00	.00	.00	.00	.09	1.09•	.23•	.25	.29	.00	.00	.00	.00	.00	.00	.00	.00	.21	.05	.00	.08
1.73*	.90	.50	1.66	1.48	.00	1.52*	.99	2.58•	1.59	.56	2.69•	8.45•	2.27	1.64	.65	.84	.42	.96	1.19	.40
1.54	.36	.25	1.25	1.48	1.09	2.42*	1.74	1.15	4.76•	15.64•	2.69	1.41	.00	1.64	1.31	1.61	.78	1.53	1.68	.96
6.45	4.67	3.47	5.19	3.23	6.52	4.30	2.61	2.29	3.18	2.80	3.46	2.82	.00	3.58	3.93	3.77	3.60	6.24	6.13	4.85
.38	.18	.25	.00	.52•	.00	.16	.62•	.00	.00	.00	.00	1.41•	.00	.45	.00	.28	.26	.21	.12	.19
.48	.36	.25	.00	.17	1.09	.27	.12	.57	.00	.00	.77•	.00	.00	.30	.00	.07	.10	.32	.33	.21
.19	.18	.00	.21	.09	.00	.27	.37	.00	.00	.56	.38	.00	.00	.30	.65	.28	.26	.30	.41	.21
.87	.36	.74	.83	1.22*	1.09	.82	.75	1.43	4.76•	.00	.77	.00	.00	1.04	.00	.49	.57	.51	.49	.35
.77	.72	.25	.21	.70	.00	.63	.37	.57	1.59	.56	.00	.00	.00	.15	.00	.49	.10	.23	.57	.19
2.98*	.72	.99	1.04	1.83	2.17	2.81*	.99	4.01*	1.59	.56	4.62•	16.90•	2.27	3.13*	2.61	1.47	1.51	1.78	1.88	1.07
.48	.18	.25	1.04	.79	3.26•	.39	.99	.57	.00	1.12	1.15	.00	4.55•	.45	.65	.35	.78	.58	.57	.27
.10	.18•	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.04	.00
2.12	4.13*	22.52*	2.29	2.88	.00	2.54	1.37	2.01	.00	1.68	1.54	.00	.00	1.64	1.96	1.40	2.14	2.01	1.35	1.23
1.06	.36	.50	1.46	.44	2.17	.63	1.12	.86	.00	.56	.77	1.41	.00	1.34	.00	1.05	.99	.77	.98	.43
.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.30•	.00	.00	.00	.02	.00	.03
3.18*	4.13	2.72	5.41	3.14	1.09	4.50	3.11	6.59	3.17	4.47	5.77	4.23	.00	4.46	5.88	26.54*	4.23	4.55	3.93	3.76
.96	.72	.99	1.04	1.14*	1.09	1.09*	1.74*	1.15	1.59	.56	1.15	.00	6.82•	5.80•	.65	.77	.63	.56	.61	.27
1.92*	1.08	.99	.62	1.40	.00	1.33*	1.99*	1.15	1.59	.56	1.92	1.41	2.27	1.79*	1.96	1.19	.73	1.04	.94	.45
7.80	19.03*	24.26*	12.06*	8.30	10.87	8.48	8.45	11.75*	9.52	7.26	9.23	4.23	4.55	8.04	12.42*	11.65*	41.05*	5.43	6.58	5.56
.19	.18	.00	.21	.35	.00	.23	.37	1.43•	1.59	.00	.00	.00	2.27•	2.53•	.65	.35	.31	.25	.12	.13
8.37	8.80	6.68	6.44	5.76	4.35	6.53	8.57	5.16	9.52	5.03	5.77	5.63	11.36	9.52	7.19	7.89	6.68	6.22	5.93	4.05
2.22	6.82	7.18	8.11	9.34	13.04	6.61	8.82	10.89	7.94	12.85	8.08	18.31	18.18	12.20	11.11	9.49	7.62	7.01	7.98	5.17
6.07	12.93	13.12	13.72	14.59	22.83	15.75	15.16	16.05	19.05	18.99	16.54	11.27	13.64	16.96	16.99	14.79	13.51	17.75	15.21	45.33

and social worker), teachers' sons overchose "college professor"; clergymen's sons overchose "college professor," "social worker," and "missionary"; and school administrators' sons overchose "missionary."

2. For fathers' occupations associated with the career choice of "engineer" (engineer, military officer, architect, biologist, physicist, and scientist [nec]), chemists' sons overchose "mathematician" and "physicist"; biologists' sons overchose "architect"; scientists' (nec) sons overchose "mathematician," "physicist," and "geologist"; and physicists' sons overchose "mathematician."

3. For fathers' occupations associated with the career choice of "physician" (physician, dentist, and paramedical professions), physicians' sons overchose only "physician"; dentists' sons overchose "dentist" and "physician"; and sons of men in the paramedical professions overchose "veterinarian," "pharmacist," "dentist," and "physician."

When only professional fathers' occupations were considered, between 30 and 40% of sons whose fathers were in scientific occupations chose scientific careers (e. g., engineer, chemist, physicist, architect, mathematician, biologist, and college scientist), compared with 10% of sons with fathers in medical fields and 14% of sons with fathers in teaching and guidance occupations. Between 20 and 30% of sons of men in teaching and guidance chose related careers (e. g., teacher, clergyman, college professor, social worker, and missionary), compared with 7% of sons of men in scientific occupations and 6% of sons of men in medical fields. Between 35 and 45% of sons with fathers in medical fields chose medical careers (e. g., veterinarian, pharmacist, dentist,

and physician), compared with 10 to 15% of sons with fathers in scientific and teaching-guidance fields. These comparisons must be interpreted cautiously, because large numbers of students fell into the "undecided" and "not elsewhere classified" categories.

Discussion

The results suggested three broad types of occupations that are passed from father to son: scientific, teaching-guidance, and medical. These results complemented previous findings on the same sample (Werts, 1966b), which showed that: (a) when fathers are in scientific occupations, their sons win more high school science contests than others of equivalent class background; (b) when fathers are in teaching-guidance occupations, their sons hold more leadership positions in high school than others of equivalent class background; and (c) when fathers are in medical occupations, their sons do not excel (relative to others of equivalent class background) in scientific, leadership, dramatic, artistic, musical, or literary activities in high school.

It is interesting to note that the occupational groupings derived from comparisons of father's occupation and son's career choice in the present study correspond closely to those derived from factor analysis of item responses on the Strong Vocational Interest Blank (Strong, 1964). The SVIB physical sciences group (i. e., Group II, which includes architect, mathematician, physicist, chemist, and engineer) conforms to our scientific fathers grouping, with the exception of military officer which falls into SVIB Group III (along with production manager). The SVIB social sciences group (Group V, which includes personnel director,

public administrator, rehabilitation counselor, YMCA secretary, social worker, social science teacher, school superintendent, and minister) encompasses all our teaching-guidance fathers' occupations. And the SVIB biological sciences group (Group I, which includes dentist, osteopath, veterinarian, physician, psychiatrist, psychologist, and biologist) comprises our medical fathers, with the exception of pharmacist which falls into the SVIB business detail group (Group VIII).

These congruities suggest that the present results are partly explainable in terms of transmittal of "interest" patterns from father to son. In terms of previous findings, it appears that: (a) fathers in scientific occupations (SVIB Group II) influence their sons to develop the same type of "interests" (as evinced by winning science contests), which, in turn, partly determine their sons' choice of scientific careers in college; and (b) fathers in teaching-guidance occupations (SVIB Group V) encourage interests in dealing with people (as evinced by leadership skills in high school) that lead their sons to choose careers in the teaching-guidance area. Super and Crites (1962, pp. 383-384) proposed two interest factors that may correspond to these hypotheses: a "scientific" factor denoting an interest in knowing the why and how of things, and a "social welfare" factor indicating an interest in people for their own sake. The considerable literature suggesting that persons in different types of occupations have widely diverse life styles--that occupations form cultural subgroups--may be relevant to the speculation about how interest factors are passed from father to son. "Interests" in this sense may be a

measure of life style and may be useful for counseling, in that they predict how well a person will fit into a particular, occupationally-related subculture.

One of the many alternative explanations of the findings is that the father directly influences his son's particular choice by approving some careers and disapproving others. This explanation is not supported by the data on the scientific and the teaching-guidance occupations, because these fathers appear to influence the development of a general type of interest. The son's choice seems relatively free to vary within the range of careers corresponding to either the "scientific" or the "social welfare" interest pattern--even if the son chooses a career with less prestige than his father's (for example, physicists' sons overchoose "engineer" and college professors' sons overchoose "teacher"). In contrast, the data do not suggest how the medical professionals influence their sons' career choices, since the earlier study of high school achievements (Werts, 1966b) did not disclose any particular high school activity patterns for their sons. Medical interests probably are not specifically reflected in the usual high school activities. The present study gives no evidence, however, that the son's career choice is free to vary within the range of medical professions: i. e., sons of pharmacists favor "pharmacist," "dentist," and "physician"; sons of dentists favor "dentist" and "physician"; and sons of physicians only "physician." These differences may be partly or wholly attributable to the differences in SES level among pharmacists, dentist, and physicians. It is quite possible that pharmacists and dentists encourage their sons

to become physicians as a result of their own professional experiences, which emphasize the advantages of being physicians.

It has been shown that sons of teachers, school and college administrators, clergymen, and social workers choose "teacher" at the high rate typical of students from lower class backgrounds, rather than at the low rate typical of students from similar class backgrounds. The choice rate of low-SES compared with that of high-SES students is an indication of the influence of SES background on the SES composition of "teacher"; the choice rate of sons of fathers in teaching-guidance occupations compared with that of sons from similar SES backgrounds indicates an independent influence on the SES composition of "teacher." Analytically, the influence of social class background can be kept separate by comparing the rate of choice among low-SES with that among high-SES students when the sons of fathers in teaching-guidance occupations are excluded from the latter group. If these sons are not excluded the difference in choice rates between low- and high-SES students will not be as great, and one will underestimate the independent influence of SES background among college students. When "engineer" is analyzed in the same way, exclusion of the sons of fathers in scientific occupations will decrease sharply the choice rate among high-SES students, indicating that the independent influence of class background is considerably greater than would have been supposed from an SES analysis of all students who choose "engineer." Exclusion of the sons of fathers in the medical professions will remove most of the SES differences from the percentage of sons choosing "physician," suggesting that among

college students SES background is not a very important influence on the choice of "physician." The case for excluding father-son choices is less clear for "physician," because SES effects within this type are clearly present and removing them would lessen the overall influence attributed to class background.

The effect of sons choosing occupations similar to their fathers' usually has little influence on the SES composition of a given career choice, because sons choosing careers similar to their fathers' are a minority. For example, teachers' sons represent only 2.57% of all those choosing "teacher," engineers' sons 5.99% of "engineers," and physicians' sons 13.46% of "physicians." Students from nonprofessional backgrounds form the majority for most career choices. These kinds of data led Wolfle (1954) to suggest that "no field of specialization draws exclusively from one class or segment of society. Instead, the talented student is comparatively free to enter any field he chooses." The professional opportunities now open to low-SES students can be ascribed partly to the rapid expansion of the professions, with the demand for personnel being much greater than the supply in most fields. If the expansion slows, the proportion of low-SES, male students entering these fields may be expected to decrease somewhat because of increased competition from the sons of professionals.

The data from our studies indicate that professionals' sons have certain advantages that low-SES students do not have. First, even with academic ability controlled, the professional's son will be more likely to have developed in childhood the specific interests and skills

possessed by his father (Werts, 1966b). Second, if he chooses an occupation like his father's, he will demonstrate somewhat greater stability or persistence in that career choice (Werts, 1967, in press). Finally, tabulations on the present data show that, even with academic ability controlled, he will aspire to a higher level of education than does the low-SES student. If the competition for professional positions becomes greater, these advantages may produce a situation in which a larger proportion of those entering a profession will have had fathers in the same or in a similar profession. Furthermore, if professionals' sons realize their aspirations, they will disproportionately fill the positions of leadership. Historically, of course, this pattern is familiar and has been noted most often in the business world.

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